

Amendment to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claim 1. (currently amended) A surface-treated steel sheet with excellent corrosion resistance comprising:

a zinc-based plated steel sheet or an aluminum-based plated steel sheet;

a surface-treatment coating having a coating ~~thicknesses~~ ~~thickness~~ ranging from 0.01 to 1 μm , and being formed by applying and drying a surface-treatment coating composition which contains ingredients (a) through (c) described below on a surface of the plated steel sheet; and

a top coating having a coating ~~thicknesses~~ ~~thickness~~ ranging from 0.3 to 2 μm , and being formed by applying and drying a coating composition for top coating, containing an (E) high molecular weight epoxy group-containing resin having a number average molecular ~~weights~~ ~~weight~~ ranging from 6000 to 20000 on the surface-treatment coating:

(a) a water-epoxy resin dispersion which is prepared by dispersing in water a resin obtained by a reaction of: an (A)

polyalkyleneglycol-modified epoxy resin derived from a reaction of polyalkyleneglycol having a number average molecular weights weight ranging from 400 to 20000, a bisphenol type epoxy resin, an active hydrogen-containing compound for blocking an isocyanate group, and a polyisocyanate compound; a (B) epoxy group-containing resin other than the (A) polyalkyleneglycol-modified epoxy resin; and an active hydrogen-containing compound in which reacts with an epoxy group in the (A) polyalkyleneglycol-modified epoxy resin and the (B) epoxy group-containing resin, a part or entire all of the active hydrogen-containing compound [[is]] being structured by a (C) hydrazine derivative having active hydrogen;

(b) a silane coupling agent ~~at amounts~~ in an amount ranging from 1 to 300 parts by mass of solid matter therein to 100 parts by mass of the resin solid matter in the water-epoxy resin dispersion; and

(c) phosphoric acid and/or a hexafluorometal acid ~~at amounts~~ in an amount ranging from 0.1 to 80 parts by mass of solid matter therein to 100 parts by mass of the resin solid matter in the water-epoxy resin dispersion.

Claim 2. (original) The surface-treated steel sheet according to claim 1, wherein the (C) hydrazine derivative containing

active hydrogen is at least one compound selected from the group consisting of a pyrazole compound and a triazole compound, which compound has a ring structure of five-membered ring or six-membered ring, and has nitrogen atom in the ring structure.

Claim 3. (currently amended) The surface-treated steel sheet according to claim 1, wherein the surface-treatment coating composition further contains a water-soluble phosphate ~~at amounts in an amount~~ ranging from 0.1 to 60 parts by mass of solid matter therein to 100 parts by mass of the resin solid matter in the water-epoxy resin dispersion of the ingredient (a).

Claim 4. (currently amended) The surface-treated steel sheet according to claim 1, wherein the surface-treatment coating composition further contains [[a]] at least one non-chromium based rust inhibitor ~~at amounts in an amount~~ ranging from 0.1 to 50 parts by mass of solid matter therein to 100 parts by mass of the resin solid matter in the water-epoxy resin dispersion of the ingredient (a).

Claims 5 to 8. (canceled)

Claim 9. (currently amended) The surface-treated steel sheet according to claim 1, wherein the coating composition for top coating further contains [[a]] at least one non-chromium based rust inhibitor ~~at amounts in an amount~~ ranging from 0.1 to 50 parts by mass of solid matter therein to 100 parts by mass of the resin solid matter in the coating composition.

Claim 10. (currently amended) The surface-treated steel sheet according to claim [[1]] 4, wherein the ~~surface treatment coating composition contains one or more compounds at least one non-chromium based rust inhibitor is~~ selected from the group consisting of ~~(e1) through (e7) given below as the non[[-]]~~ ~~chromium-based rust inhibitor[[:]]~~

- (e1) silicon oxide,
- (e2) calcium and/or a calcium compound,
- (e3) a slightly-soluble phosphoric acid compound,
- (e4) a molybdic acid compound,
- (e5) a vanadium compound,
- (e6) an organic compound containing a S atom, being one or more compounds selected from the group consisting of triazole, thiol, thiaziazole, thiazole [[,]] and thiuram and
- (e7) an organic compound containing a N atom, being one or more compounds selected from the group consisting of a hydrazide

compound, a pyrazole compound, a triazole compound, a tetrazole compound, a thiaziazole compound [[,]] and a pyridazine compound.

Claim 11. (currently amended) The surface-treated steel sheet according to claim [[1]] 9, wherein the ~~coating composition for top coating contains one or more compounds at least one non-chromium based rust inhibitor is~~ selected from the group consisting of (e1) through (e7) given below as the ~~non~~ [[-]] ~~chromium based rust inhibitor~~[[::]]

- (e1) silicon oxide,
- (e2) calcium and/or a calcium compound,
- (e3) a slightly-soluble phosphoric acid compound,
- (e4) a molybdic acid compound,
- (e5) a vanadium compound,
- (e6) an organic compound containing a S atom, being one or more compounds selected from the group consisting of triazole, thiol, thiaziazole, thiazole [[,]] and thiuram and
- (e7) an organic compound containing a N atom, being one or more compounds selected from the group consisting of a hydrazide compound, a pyrazole compound, a triazole compound, a tetrazole compound, a thiaziazole compound [[,]] and a pyridazine compound.

Claim 12. (currently amended) The surface-treated steel sheet according to claim 1, wherein the coating composition for top coating further contains a curing agent having a group which crosslinks with a hydroxyl group, ~~at amounts in an amount~~ ranging from 1 to 50 parts by mass of solid matter therein to 100 parts by mass of the solid matter in the (E) high molecular weight epoxy group-containing resin.

Claim 13. (currently amended) The surface-treated steel sheet according to claim 12, wherein the curing agent having a group crosslinking with a hydroxyl group is an (F) amino resin which has one or more imino groups as an average within a single molecule thereof.

Claim 14. (currently amended) The surface-treated steel sheet according to claim 12, wherein the curing agent having a group crosslinking with a hydroxyl group is a (G) polyisocyanate compound which has four or more isocyanate groups as an average within a single molecule thereof.

Claim 15. (currently amended) The surface-treated steel sheet according to claim 14, wherein the (G) polyisocyanate compound is

~~the one in which~~ has at least some of the isocyanate groups in the polyisocyanate compound which are blocked by a blocking agent.

Claim 16. (currently amended) The surface-treated steel sheet according to claim 1, wherein the (E) high molecular weight epoxy group-containing resin in the coating composition for top coating is a modified epoxy group-containing resin which is modified by an (H) active hydrogen-containing compound ~~in which~~ reacts with an epoxy group, a part or entire all of the active hydrogen-containing compound is structured by an (I) hydrazine derivative having active hydrogen.

Claim 17. (currently amended) The surface-treated steel sheet according to claim 1, wherein the coating composition for top coating further contains a solid lubricant ~~at amounts in an~~ amount ranging from 1 to 30 parts by mass of solid matter therein to 100 parts by mass of the resin solid matter in the coating composition.

Claim 18. (currently amended) A method for manufacturing surface-treated steel sheet with excellent corrosion resistance comprising the steps of:

(i) applying a surface-treatment coating composition which contains ingredients (a) through a water-epoxy resin dispersion, (b) a silane coupling agent and (c) described below phosphoric acid and/or a hexafluorometal acid onto a surface of a zinc-based plated steel sheet or an aluminum-based plated steel sheet, and then drying the applied surface-treatment coating composition at an ultimate sheet temperatures temperature ranging from 30°C to 150°C, thus forming a surface-treatment coating having a coating thicknesses thickness ranging from 0.01 to 1 µm; and

(ii) forming a top coating having a coating thicknesses thickness ranging from 0.3 to 2 µm on the surface-treatment coating by applying a coating composition for top coating containing an (E) high molecular weight epoxy group-containing resin having a number average molecular weights weight ranging from 6000 to 20000, and then by drying the applied coating composition for top coating at an ultimate sheet temperatures temperature ranging from 30°C to 150°C [[:]] ;

[[(a) a]] said water-epoxy resin dispersion which (a) is prepared by dispersing in water a resin obtained by a reaction of: an (A) polyalkyleneglycol-modified epoxy resin derived from a reaction of polyalkyleneglycol having a number average molecular weights weight ranging from 400 to 20000, a bisphenol type epoxy

resin, an active hydrogen-containing compound for blocking an isocyanate group, and a polyisocyanate compound; a (B) epoxy group-containing resin other than the (A) polyalkyleneglycol-modified epoxy resin; and an active hydrogen-containing compound in which reacts with an epoxy group in the (A) polyalkyleneglycol-modified epoxy resin and the (B) epoxy group-containing resin, a part or entire all of the active hydrogen-containing compound is being structured by a (C) hydrazine derivative having active hydrogen;

[[(b) a]] said silane coupling agent ~~at amounts being in an amount~~ ranging from 1 to 300 parts by mass of solid matter therein to 100 parts by mass of the resin solid matter in the water-epoxy resin dispersion; and

[[(c)]] said phosphoric acid and/or a hexafluorometal acid ~~at amounts (c) being in an amount~~ ranging from 0.1 to 80 parts by mass of solid matter thereof to 100 parts by mass of the resin solid matter in the water-epoxy resin dispersion.

Claim 19. (canceled)

Claim 20. (currently amended) The surface-treated steel sheet according to claim 2, wherein the surface-treatment coating composition further contains a water-soluble phosphate ~~at amounts in an amount~~ ranging from 0.1 to 60 parts by mass of solid matter

therein to 100 parts by mass of the resin solid matter in the water-epoxy resin dispersion of the ingredient (a).

Claim 21. (canceled)

Claim 22. (new) The surface-treated steel sheet according to claim 1, wherein the active-hydrogen containing compound is selected from the group consisting of a monohydric alcohol, a monohydric carboxylic acid, a monohydric thiol, a secondary amine and an oxime compound.

Claim 23. (new) The surface-treated steel sheet according to claim 1, wherein the active-hydrogen containing compound is selected from the group consisting of methanol, ethanol, diethylenglycol monobutyl ether, acetic acid, propyonic acid, ethylmercaptan, diethylamine, methylethylketoxime, phenol and nonylphenol.

Claim 24. (new) The surface-treated steel sheet according to claim 16, wherein the active hydrogen-containing compound is selected from the group consisting of carbohydrazide, hydrazide propionate, hydrazide salicylate, dihydrazide adipate, dihydrazide sebacylate, dihydrazide dodecanate, dihydrazide isophthalate, thiocarbohydrazide, 4,4'-oxybisbenzenesulfonyl hydrazide, benzophenone hydrazone and aminopolyacrylamide.